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REMARKS

Claims 1-4 are the claims pending in the application, claims 5 and 6 having been canceled without prejudice or disclaimer, claims 7-20 having been added in the present amendment to claim the disclosed invention more completely.

The Examiner has suggested alternative wording for claiming priority, which Applicant has adopted in the forgoing amendment to the specification.

Applicant also acknowledges that the previously submitted substitute specification has been entered. As requested, Applicant will correct any errors in this substitute specification that may later be discovered.

Claims 1-6 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Claims 1-6 stand rejected under 35 U.S.C. §102(b) as being anticipated by Sgroi (U.S. Patent No. 5,357,048). Claims 1-6 stand rejected under 35 U.S.C. §102(a) as being anticipated by Hewitt (U.S. Patent No. 6,100,461). Applicant respectfully traverses these rejections, and requests reconsideration and allowance of the pending claims in view of the following arguments.

Rejection Under 35 U.S.C. §112

The Examiner has rejected claims 1-6 under 35 U.S.C. §112, second paragraph, as being indefinite. The Examiner asserts that as recited in independent claims 1 and 2, "a low frequency oscillator" and "a transient generator" are not alternative and functional equivalents, and therefore recite an improper Markush group. Applicant respectfully disagrees.

As is known in the art and which is described and claimed in the present application, "a low frequency oscillator" and "a transient generator" represent alternative or complementary control signal sources (control signal generators). Applicant's position is that both low frequency

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oscillators and transient generators (slew limiters, ramp generators, envelope generators) are used as peer and functionally equivalent control sources (albeit with different behavioral characteristics) in nearly all music synthesis architectures. Applicant further asserts that one of ordinary skill will understand that “a low frequency oscillator” and “a transient generator” represent alternative or complementary control signal generators. As such, independent claims 1 and 2 recite proper Markush groups. Accordingly, claims 1 and 2, and their dependencies, claims 3 and 4, are patentable.

Claims 5 and 6 have been canceled without disclaimer or prejudice by the instant amendment making these claim rejections moot.

Rejection Under 35 U.S.C. §102(b)
As Being Anticipated By Sgroi

The Examiner rejects claims 1-6 under 35 U.S.C. §102(b) as being anticipated by Sgroi. The Examiner states that Sgroi discloses a MIDI sound designer with a randomizer that anticipates Applicant’s transient generator feature. Applicant respectfully disagrees.

The present invention, as recited in independent claims 1 and 2, is directed to a system and method for the generation of at least one outgoing real-time digital control signal. These independent claims specifically recite at least one incoming control signal to control associated events and parameters. As such, Applicant’s “incoming control signal” feature refers to control signals that are introduced from outside of the outgoing control signal subsystem.

An example of externally providing incoming control signals is shown in Figure 1 of the present application. In this Figure, incoming control signals 113 are shown entering the generalized interface 100 from the signal routing, processing, and synthesis subsystem 120.

Further examples of Applicant's usage of "incoming control signal" to denote externally provided signals may be found in the specification, within Section 1.2 and Section 5 (pgs. 21-23, and 140-150 of the substitute specification). Clearly, Applicant's "incoming control signal" feature, as recited in independent claims 1 and 2, refers to externally provided control signals.

Sgroi, on the other hand, is directed towards a MIDI controller that is limited to internally generated control signals. For example, Sgroi describes a controller where all of the control signals are internally generated by devices such as potentiometers, switches, and keyboards (Sgroi, Fig. 4; col. 3, line 57 to col. 4, line 58), as well as randomizers (Sgroi Fig. 4; col. 6, lines 16-53). As such, both the original control signal and the modifying (randomizing) signal of the Sgroi controller are internally generated within the controller, and thus are not externally provided to the controller.

Applicant therefore asserts that Sgroi at most describes a controller that is limited to internally generated control signals, and therefore does not teach Applicant's "incoming control signal" feature which utilizes externally provided control signals. Accordingly, independent claims 1 and 2, and their dependencies, claims 3 and 4, are patentable.

Rejection Under 35 U.S.C. §102(a)
As Being Anticipated By Hewitt

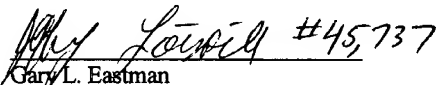
The Examiner rejects claims 1-6 under 35 U.S.C. §102(a) as being anticipated by Hewitt. The Examiner asserts that Hewitt discloses a wavetable burst controller that anticipates Applicant's transient generator feature. Applicant respectfully disagrees with the Examiner's characterization of the Hewitt reference and will demonstrate that Hewitt merely describes

(claims 1 and 2). Accordingly, independent claims 1 and 2, as well as dependent claims 3 and 4, are patentable.

The Examiner's rejections having been overcome, Applicant submits that the subject application is in condition for allowance. The Examiner is respectfully requested to contact the undersigned to discuss other changes deemed necessary.

Respectfully submitted,

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APPENDIX

AMENDMENT WITH MARKINGS TO SHOW CHANGES MADE
IN THE SPECIFICATION

Page 1, please delete the first paragraph and replace it with the following new paragraph:

This application is a division of U.S. application number 09/313,533, filed May 15, 1999, which claims benefit of priority of U.S. provisional application number 60/085,713, filed May 15, 1998.

[This application is a divisional continuation of U.S. application number 09/313,533, filed May 15, 1999, in turn based on U.S. Provisional Serial Number 60/085,713 filed May 15, 1998.]

IN THE CLAIMS

Please amend the claims as follows:

1. (Once Amended) A system for the generation of at least one outgoing real-time digital control signal[s] based on at least one incoming control signal, the system comprising at least one control signal generator of one of the following types:

a low frequency oscillator

a transient generator

wherein the at least one incoming control signal is used to control events and parameters associated with the at least one control signal generator.

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14. The method of claim 4 wherein the at least one incoming control signal comprises MIDI messages.

15. A method for generating at least one outgoing digital control signal utilizing at least one control signal processor, the method comprising:

processing a first incoming real-time control signal;

processing a second incoming control signal; and

determining the at least one outgoing digital control signal based upon a combination of the first incoming real-time control signal and the second incoming control signal.

16. The method of claim 15 wherein the first incoming real-time control signal and the second incoming control signal comprises MIDI messages.

17. The method of claim 15 wherein the at least one outgoing digital control signal comprises MIDI messages.

18. The method of claim 15 wherein both the first incoming real-time control signal and the second incoming control signal comprise values, and wherein the control signal processor performs one operation selected from the group consisting of:

o multiplication of the values of the first and second incoming control signals;

- addition of the values of the first and second incoming control signals.

19. The method of claim 15 wherein a temporal sequence of the first and second incoming control signals is used to generate the at least one outgoing digital control signal.

20. A method for processing an incoming real-time MIDI control signal, the method comprising:

generating an outgoing real-time MIDI control signal, wherein said generating is performed by one or more message conversion methods selected from the group consisting of:

- changing an incoming MIDI note number value to an outgoing MIDI continuous controller value
- changing an incoming MIDI note velocity value to an outgoing MIDI continuous controller value
- changing an incoming MIDI continuous controller value to an outgoing MIDI note value
- changing an incoming MIDI continuous controller value to an outgoing MIDI continuous controller value with scaling
- changing an incoming MIDI continuous controller value to an outgoing MIDI continuous controller value with offset
- changing an incoming MIDI continuous controller value to an outgoing MIDI continuous controller value with complementary magnitude

- changing an incoming MIDI note number value to an outgoing MIDI note number value according to variably transposed intelligent harmony.